

Complete Summary

GUIDELINE TITLE

Diet and lifestyle recommendations revision 2006. A scientific statement from the American Heart Association Nutrition Committee.

BIBLIOGRAPHIC SOURCE(S)

American Heart Association Nutrition Committee, Lichtenstein AH, Appel LJ, Brands M, Carnethon M, Daniels S, Franch HA, Franklin B, Kris-Etherton P, Harris WS, Howard B, Karanja N, Lefevre M, Rudel L, Sacks F, Van Horn L, Winston M, Wylie-Rosett J. Diet and lifestyle recommendations revision 2006: a scientific statement from the American Heart Association Nutrition Committee. *Circulation* 2006 Jul 4;114(1):82-96. [97 references] [PubMed](#)

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

SCOPE
 METHODOLOGY - including Rating Scheme and Cost Analysis
 RECOMMENDATIONS
 EVIDENCE SUPPORTING THE RECOMMENDATIONS
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 CATEGORIES
 IDENTIFYING INFORMATION AND AVAILABILITY
 DISCLAIMER

SCOPE

DISEASE/CONDITION(S)

Cardiovascular disease

GUIDELINE CATEGORY

Prevention

CLINICAL SPECIALTY

Cardiology
 Family Practice

Nutrition
Pediatrics
Preventive Medicine

INTENDED USERS

Advanced Practice Nurses
Dietitians
Physicians
Public Health Departments

GUIDELINE OBJECTIVE(S)

To reduce cardiovascular disease risk in adults and children over two years of age

TARGET POPULATION

General population, including adults and children over two years of age

INTERVENTIONS AND PRACTICES CONSIDERED

1. Promotion of cardiovascular health with regard to diet composition, total calorie intake, lifestyle modifications and physical activity
2. Interventions to improve implementation of diet and lifestyle recommendations
 - Lifestyle
 - Food choices and preparation
3. Public health strategies for improving diet and lifestyle changes and promoting physical activity
4. Special groups
 - Children over 2 years of age
 - Older adults
 - Persons with metabolic syndrome
 - Persons with chronic kidney disease
 - Socioeconomic groups at high risk of cardiovascular disease

MAJOR OUTCOMES CONSIDERED

- Risk of developing cardiovascular disease
- Incidence of obesity-related comorbidities
- Body weight/ body mass index
- Lipid profile
- Blood pressure
- Blood glucose level

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Expert peer review of American Heart Association (AHA) Scientific Statements is conducted at the AHA National Center.

This statement was approved by the American Heart Association Science Advisory and Coordinating Committee on April 26, 2006.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

AHA Diet and Lifestyle Goals

The general recommendations contained in this document generally can be applied to the clinical management of patients with or at risk for cardiovascular disease (CVD). For certain patients at higher risk, the recommendations may have to be intensified. Although great advances have been made in prevention and treatment of CVD through drug therapies and procedures, diet and lifestyle therapies remain the foundation of clinical intervention for prevention.

Unfortunately, the latter commonly are neglected, to the detriment of patients. Rigorous application of the principles of diet and lifestyle intervention outlined in this document to patients at risk will contribute significantly to risk reduction and will augment the benefit that may be obtained by other approaches. The clinical approach is an extension of the public health approach, with some modifications depending on the type of patient.

Table. American Heart Association (AHA) 2006 Diet and Lifestyle Goals for Cardiovascular Disease Risk Reduction

- Consume an overall healthy diet
- Aim for a healthy body weight
- Aim for recommended levels of low-density lipoprotein (LDL) cholesterol, high-density lipoprotein (HDL) cholesterol, and triglycerides.
- Aim for a normal blood pressure
- Aim for a normal blood glucose level
- Be physically active
- Avoid use of and exposure to tobacco products

Consume an Overall Healthy Diet

An emphasis on whole diet is also appropriate to ensure nutrient adequacy and energy balance. Hence, rather than focusing on a single nutrient or food, individuals should aim to improve their whole or overall diet. Consistent with this principle, the American Heart Association (AHA) recommends that individuals consume a variety of fruits, vegetables, and grain products, especially whole grains; choose fat-free and low-fat dairy products, legumes, poultry, and lean meats; and eat fish, preferably oily fish, at least twice a week (see Table below titled "AHA 2006 Diet and Lifestyle Recommendations for Cardiovascular Disease Risk Reduction").

Aim for a Healthy Body Weight

A healthy body weight is currently defined as a body mass index (BMI) of 18.5 to 24.9 kg/m². Overweight is a BMI between 25 and 29.9 kg/m², and obesity is a BMI ≥ 30 kg/m². Achieving and maintaining a healthy weight throughout the life cycle are critical factors in reducing cardiovascular disease (CVD) risk in the general population. Data indicate that body weight at 18 years tracks with subsequent risk of developing CVD and diabetes, as does weight gain after 18 years of age. It is important to intensify efforts in the general population to help individuals avoid inappropriate weight gain during childhood and subsequent weight gain during adult years. Increased emphasis should be put on prevention of weight gain, because achievement and maintenance of weight loss, although certainly possible, require more difficult behavioral changes (i.e., greater calorie reduction and more physical activity) than prevention of weight gain in the first place.

Aim for a Desirable Lipid Profile

LDL levels are classified as follows: optimal, <100 mg/dL; near or above optimal, 100 to 129 mg/dL; borderline high, 130 to 159 mg/dL; high, 160 to 189 mg/dL; and very high, ≥ 190 mg/dL. Current recommendations for LDL cholesterol goals depend on the estimated 10-year risk of developing CVD and the presence of CVD-related risk factors. Although drug therapy is often prescribed for those at moderate or high risk, dietary changes are recommended for all individuals. Although at this time there are no HDL cholesterol goals as there are for LDL cholesterol, levels <50 mg/dL in women and <40 mg/dL in men are considered one of the criteria for the classification of metabolic syndrome. Likewise, although at this time there are no triglyceride goals, levels >150 mg/dL are considered one of the criteria for the classification of metabolic syndrome.

Aim for a Normal Blood Pressure

A normal blood pressure (BP) is a systolic BP <120 mm Hg and a diastolic BP <80 mm Hg. No evidence of a BP threshold exists—that is, the risk of CVD increases progressively throughout the range of BP, including the prehypertensive range (a systolic BP of 120 to 139 mm Hg or diastolic BP of 80 to 89 mm Hg). Hence, efforts to reduce BP to normal levels are warranted, even among individuals with prehypertension. Dietary modifications that lower BP are reduced salt intake, caloric deficit to induce weight loss, moderation of alcohol consumption (among those who drink), increased potassium intake, and consumption of an overall healthy diet, based on the DASH (Dietary Approaches to Stop Hypertension) diet. The latter is a carbohydrate-rich diet that emphasizes fruits, vegetables, and low-fat dairy products; includes whole grains, poultry, fish, and nuts; and is reduced in fats, red meat, sweets, and sugar-containing beverages. Replacement of some carbohydrates with either protein from plant sources or with monounsaturated fat can further lower BP.

Aim for a Normal Blood Glucose Level

A normal fasting glucose level is ≤ 100 mg/dL, whereas diabetes is defined by a fasting glucose level ≥ 126 mg/dL.

Be Physically Active

Regular physical activity is essential for maintaining physical and cardiovascular fitness, maintaining healthy weight, and sustaining weight loss once achieved.

Avoid Use of and Exposure to Tobacco Products

On the basis of the overwhelming evidence for the adverse effects of tobacco products and secondary exposure to tobacco smoke on CVD, as well as cancer and other serious illness, the AHA strongly and unequivocally endorses efforts to eliminate the use of tobacco products and minimize exposure to second-hand smoke. Because cessation of smoking in habitual smokers can be associated with weight gain, particular attention should be given to preventing this outcome. Concern about weight gain should not be a reason for continued use of tobacco products.

AHA Diet and Lifestyle Recommendations

The AHA 2006 Diet and Lifestyle Recommendations (see Table below) are intended to reduce CVD risk. These recommendations are intentionally presented in a manner that allows maximal flexibility in their implementation among a group of individuals with a wide range of dietary preferences and to meet the unique needs for growth, development, and aging. They are not presented as a "diet plan," per se, but rather a lifestyle prescription to promote cardiovascular health. Two examples of eating patterns at 2000 calories per day that meet the AHA 2006 Diet and Lifestyle Recommendations are presented in Table 4 in the original guideline document. The 2 examples provide a general framework to aid health practitioners in giving general, practical food-group-based guidance. The example of 2000 calories is provided for consistency with the Nutrition Facts Panel. For individuals who consume more or less than 2000 calories, appropriate adjustments in number of servings per day that are consistent with achieving and maintaining a healthy body weight should be made.

Although the recommendations present guidance about specific nutrients and types of foods, the importance of an overall healthy diet and lifestyle cannot be overemphasized. Multiple dietary factors influence CVD risk, and not all do so via changes in the risk factors described above. Hence, CVD benefit is likely to accrue by adherence to a healthy diet and lifestyle even if these risk factors are not markedly altered. Although the Food and Drug Administration (FDA) has sanctioned health claims for certain nutrients and foods, a focus on the overall diet is preferred over a specific focus on individual dietary components. This is, in part, due to the overarching goal of achieving energy balance and nutrient adequacy. If a specific food or category of foods is added to, rather than used to displace, other food from the diet (e.g., as a result of an FDA claim or new research finding), then the additional calories can lead to weight gain.

Table. AHA 2006 Diet and Lifestyle Recommendations for Cardiovascular Disease Risk Reduction

- Balance calorie intake and physical activity to achieve or maintain a healthy body weight.

- Consume a diet rich in vegetables and fruits.
- Choose whole-grain, high-fiber foods.
- Consume fish, especially oily fish, at least twice a week.
- Limit your intake of saturated fat to <7% of energy, trans fat to <1% of energy, and cholesterol to <300 mg per day by
 - Choosing lean meats and vegetable alternatives
 - Selecting fat-free (skim), 1%-fat, and low-fat dairy products
 - Minimizing intake of partially hydrogenated fats
- Minimize your intake of beverages and foods with added sugars.
- Choose and prepare foods with little or no salt.
- If you consume alcohol, do so in moderation
- When you eat food that is prepared outside of the home, follow the AHA Diet and Lifestyle Recommendations.

Balance Calorie Intake and Physical Activity to Achieve or Maintain a Healthy Body Weight

To avoid weight gain after childhood, individuals must control calorie intake so that energy balance is achieved—that is, energy intake matches energy expenditure. To control calorie intake, individuals should increase their awareness of the calorie content of foods and beverages per portion consumed and should control portion size. The macronutrient composition of a diet (i.e., the amount of fat, carbohydrate, and protein) has little effect on energy balance unless macronutrient manipulation influences total energy intake or expenditure. While reducing caloric intake, individuals should adopt and maintain a diet consistent with recommendations in this document.

A physically active lifestyle is recommended to reduce risk for CVD in all individuals, regardless of body weight. Regular physical activity also reduces symptoms in patients with established CVD. Among individuals who are overweight or obese, regular physical activity along with calorie restriction is recommended as a means to achieve weight loss. Regular daily physical activity has been shown to be particularly effective in maintaining weight loss once achieved.

The AHA recommends that all adults accumulate ≥ 30 minutes of physical activity most days of the week. Additional benefits will likely be derived if activity levels exceed this minimum recommendation. At least 60 minutes of physical activity most days of the week is recommended for adults who are attempting to lose weight or maintain weight loss and for children. The physical activity can be accumulated throughout the day. It is not easy for individuals to achieve these goals. However, it is important to encourage behaviors that will facilitate achieving and maintaining these goals over time. Achieving a physically active lifestyle requires effective time management, with a particular focus on reducing sedentary activities such as screen time (e.g., watching television, surfing the Web, playing computer games) and making daily choices to move rather than be moved (e.g., taking the stairs instead of the elevator).

Consume a Diet Rich in Vegetables and Fruits

A variety of vegetables and fruits are recommended. Vegetables and fruits that are deeply colored throughout (e.g., spinach, carrots, peaches, berries) should be emphasized because they tend to be higher in micronutrient content than are other vegetables and fruits such as potatoes and corn. Fruit juice is not equivalent to the whole fruit in fiber content and perhaps satiety value and should not be emphasized. A diet rich in vegetables and fruits is a strategy for lowering the energy density of the diet to control energy intake. Equally important is the method of preparation. Techniques that preserve nutrient and fiber content without adding unnecessary calories, saturated or trans fat, sugar, and salt are recommended (see Table below titled "Practical Tips to Implement AHA 2006 Diet and Lifestyle Recommendations").

Choose Whole-Grain, High-Fiber Foods

The AHA recommends that at least half of grain intake come from whole grains.

Consume Fish, Especially Oily Fish, at Least Twice a Week

Methods used to prepare fish should minimize the addition of saturated and trans fatty acids, as occurs with the use of cream sauces or hydrogenated fat during frying.

Contamination of certain fish with methyl mercury, polychlorinated biphenyls, and other organic compounds is a potential concern. Subgroups of the population, primarily children and pregnant women, are advised by the Food and Drug Administration (FDA) to avoid eating those fish with the potential for the highest level of mercury contamination (e.g., shark, swordfish, king mackerel, or tilefish), eat up to 12 ounces (2 average meals) per week of a variety of fish and shellfish that are lower in mercury (e.g., canned light tuna, salmon, pollock, catfish), and check local advisories about the safety of fish caught by family and friends in local lakes, rivers, and coastal areas. Potential exposure to some contaminants can be reduced by removing the skin and surface fat from these fish before cooking. For middle-aged and older men and postmenopausal women, the benefits of fish consumption far outweigh the potential risks when amounts of fish are eaten within the recommendations established by the FDA and Environmental Protection Agency. Consumers should also check with local and state authorities about types of fish and watersheds that may be contaminated and the FDA Web site for the most up-to-date information on recommendations for specific subgroups of the US populations (e.g., children, pregnant women).

Limit Your Intake of Saturated and Trans Fat and Cholesterol

As a set of goals, the AHA recommends intakes of <7% of energy as saturated fat, <1% of energy as trans fat, and <300 mg cholesterol per day. These goals can be achieved by (1) choosing lean meats and vegetable alternatives; (2) selecting fat-free (skim), 1%-fat, and low-fat dairy products; and (3) minimizing intake of partially hydrogenated fats.

Efforts to reduce saturated fat and cholesterol typically rely on replacement of animal fats with unsaturated fats (polyunsaturated and monounsaturated fats) and on selection of lower-fat versions of foods (e.g., replacing full-fat dairy products with nonfat or low-fat versions). Replacing meats with vegetable

alternatives (e.g., beans) or fish is one strategy to replace saturated fats with unsaturated fats and reduce the cholesterol content. In view of the positive linear relationship among dietary saturated fat, LDL cholesterol, and CVD risk, and current US intakes, the AHA now recommends a population-wide goal of <7% of energy.

There are currently no numerical goals for trans fat. The Institute of Medicine recommends limiting trans fat intake as much as possible, and both the 2005 Dietary Guidelines Advisory Committee and a recent FDA Food Advisory Committee, Nutrition Subcommittee, recommended that the intake of trans fat be $\leq 1\%$ of energy. (The FDA subcommittee voted [6 yes, 1 abstaining] in favor of the recommendation.) For this reason, the AHA recommends the goal of a diet containing <1% trans fatty acids.

The relative health effects of polyunsaturated and monounsaturated fats are actively debated. A few clinical outcome trials have documented that replacement of saturated fat with polyunsaturated fats reduces the risk of developing CHD, whereas prospective observational studies have documented that diets rich in monounsaturated fats are associated with a reduced risk of CHD. The AHA supports the recommendations of the Institute of Medicine and the National Cholesterol Education Program for total fat. A range of 25% to 35% for total fat is an appropriate level of intake in a healthy dietary pattern.

Minimize Your Intake of Beverages and Foods with Added Sugars

The primary reasons for reducing the intake of beverages and foods with added sugars are to lower total calorie intake and promote nutrient adequacy. Individuals who consume large amounts of beverages with added sugars tend to consume more calories and gain weight.

Choose and Prepare Foods with Little or No Salt

Because of the progressive dose-response relationship between sodium intake and BP, it is difficult to set a recommended upper level of sodium intake, which could be as low as 1.5 g/d (65 mmol/d). However, in view of the available high-sodium food supply and the currently high levels of sodium consumption, a reduction in sodium intake to 1.5 g/d (65 mmol/d) is not easily achievable at present. In the interim, an achievable recommendation is 2.3 g/d (100 mmol/d).

If You Consume Alcohol, Do So in Moderation

The AHA recommends that if alcoholic beverages are consumed, they should be limited to no more than 2 drinks per day for men and 1 drink per day for women, and ideally should be consumed with meals. In general, a 12-ounce bottle of beer, a 4-ounce glass of wine, and a 1 1/2-ounce shot of 80-proof spirits all contain the same amount of alcohol (one half ounce). Each of these is considered a "drink equivalent."

When You Eat Food That is Prepared Outside of the Home, Follow the AHA 2006 Diet and Lifestyle Recommendations

Attainment of a healthy diet will require individuals to make wise choices when they eat food prepared outside of the home.

Table: Practical Tips to Implement AHA 2006 Diet and Lifestyle Recommendations

| |
|---|
| Lifestyle |
| <ul style="list-style-type: none">• Know your caloric needs to achieve and maintain a healthy weight.• Know the calorie content of the foods and beverages you consume.• Track your weight, physical activity, and calorie intake.• Prepare and eat smaller portions.• Track and, when possible, decrease screen time (e.g., watching television, surfing the Web, playing computer games).• Incorporate physical movement into habitual activities.• Do not smoke or use tobacco products.• If you consume alcohol, do so in moderation (equivalent of no more than 1 drink in women or 2 drinks in men per day). |
| Food choices and preparation |
| <ul style="list-style-type: none">• Use the nutrition facts panel and ingredients list when choosing foods to buy.• Eat fresh, frozen, and canned vegetables and fruits without high-calorie sauces and added salt and sugars.• Replace high-calorie foods with fruits and vegetables.• Increase fiber intake by eating beans (legumes), whole-grain products, fruits, and vegetables.• Use liquid vegetable oils in place of solid fats.• Limit beverages and foods high in added sugars. Common forms of added sugars are sucrose, glucose, fructose, maltose, dextrose, corn syrups, concentrated fruit juice, and honey.• Choose foods made with whole grains. Common forms of whole grains are whole wheat, oats/oatmeal, rye, barley, corn, popcorn, brown rice, wild rice, buckwheat, triticale, bulgur (cracked wheat), millet, quinoa, and sorghum.• Cut back on pastries and high-calorie bakery products (e.g., muffins, doughnuts).• Select milk and dairy products that are either fat free or low fat.• Reduce salt intake by<ul style="list-style-type: none">• Comparing the sodium content of similar products (e.g., different brands of tomato sauce) and choosing products with less salt• Choosing versions of processed foods, including cereals and baked goods, that are reduced in salt• Limiting condiments (e.g., soy sauce, ketchup).• Use lean cuts of meat and remove skin from poultry before eating.• Limit processed meats that are high in saturated fat and sodium.• Grill, bake, or broil fish, meat, and poultry.• Incorporate vegetable-based meat substitutes into favorite recipes.• Encourage the consumption of whole vegetables and fruits in place of juices. |

Other Dietary Factors That Affect CVD Risk

Fish Oil Supplements

The AHA recommends that patients without documented coronary heart disease (CHD) eat a variety of fish, preferably oily fish, at least twice a week. Patients with documented CHD are advised to consume approximately 1 g of eicosapentaenoic acid (EPA) + docosahexaenoic acid (DHA) per day, preferably from oily fish, although EPA+DHA supplements could be considered in consultation with their physician. For individuals with hypertriglyceridemia, 2 to 4 g of EPA+DHA per day, provided as capsules under a physician's care, are recommended.

Plant Stanols/Sterols

Plant stanols/sterols lower LDL cholesterol levels by up to 15% and therefore are seen as a therapeutic option, in addition to diet and lifestyle modification, for individuals with elevated LDL cholesterol levels. Maximum effects are observed at plant stanol/sterol intakes of approximately 2 g per day. Plant stanol/sterols are currently available in a wide variety of foods, drinks, and soft gel capsules. The choice of vehicle should be determined by availability and by other considerations, including caloric content. To sustain LDL cholesterol reductions from these products, individuals need to consume them daily, just as they would use lipid-lowering medication.

Special Groups

Children Over 2 Years of Age

Children can eat a diet consistent with the AHA 2006 Diet and Lifestyle Recommendations and maintain appropriate growth while lowering risk for future CVD. Furthermore, because diet in youth is associated with the occurrence of CVD outcomes later in life and because lifestyle habits in youth track into adulthood, adoption of a healthy diet and lifestyle at early ages is recommended.

Older Adults

In general, the goals and recommendations described in this document are appropriate for older-aged individuals. Because they have decreased energy needs while their vitamin and mineral requirements remain constant or increase, however, older individuals should be counseled to select nutrient-dense choices within each food group.

Persons with Metabolic Syndrome

The primary approach to reducing CVD risk in persons with the metabolic syndrome is to control the individual risk factors by diet and lifestyle intervention. Physical activity and weight maintenance are recommended as a means to prevent the development of metabolic syndrome and lower the risk of developing type 2 diabetes or CHD. Very low-fat diets should be avoided if elevated triglyceride or depressed HDL cholesterol levels are present. Reducing caloric intake while maintaining a moderate-fat diet and increasing physical activity to

achieve even a modest weight loss can improve insulin resistance and the concomitant metabolic abnormalities.

Persons with Chronic Kidney Disease

Dietary therapies recommended for the general population are also recommended for persons with early stages of chronic kidney disease (CKD), even though empiric evidence is sparse. In particular, a reduced salt intake is recommended as a means to reduce BP and prevent fluid overload, and dietary strategies to manage dyslipidemia are also recommended. Replacing meat with dairy and vegetable alternatives may also slow loss of kidney function. At advanced stages of CKD, the dietary management of CKD diverges from general population recommendations; in particular, a reduced intake of protein, phosphorus, and potassium is recommended.

Socioeconomic Groups at High Risk of CVD

Promotion of a desirable diet should be culturally sensitive and should encourage healthy preparation of traditional ethnic foods.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of evidence supporting the recommendations is not specifically stated.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

By adhering to the diet and lifestyle recommendations given, Americans can substantially reduce their risk of developing cardiovascular disease, which remains the leading cause of morbidity and mortality in the United States.

POTENTIAL HARMS

Not stated

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

High-Priority Recommendations to Facilitate Adoption of American Heart Association (AHA) 2006 Diet and Lifestyle Recommendations

Practitioners:

- Advocate a healthy dietary pattern consistent with AHA recommendations.
- Encourage regular physical activity.
- Calculate body mass index (BMI) and discuss results with patients.
- Discourage smoking among nonsmokers and encourage smoking cessation among patients who do smoke.
- Encourage moderation of alcohol intake among those who do drink alcohol.

Restaurants:

- Display calorie content prominently on menus, or make calorie and other nutrition information easily accessible to consumers at point of decision and point of purchase.
- Reduce portion sizes and provide options for selecting smaller portions.
- Reformulate products to reduce calories, sodium, and saturated and trans fats.
- Use trans fat-free and low-saturated fat oils in food preparation to eliminate added trans fat without increasing saturated fat.
- Provide more vegetable options, and prepare them with minimal added calories and salt.
- Provide more fruit options, and serve them without added sugar.
- Develop creative approaches to including and marketing fruits and vegetables to make them more attractive to consumers.
- Allow substitution of nonfried and low-fat vegetables for usual side dishes (e.g., French fries and potato salad).
- Provide whole-grain options for bread, crackers, pasta and rice.

Food Industry:

- Reduce the salt and sugar content of processed foods.
- Replace saturated and trans fats in prepared foods and baked goods with low-saturated fat liquid vegetable oils.
- Increase the proportion of whole-grain foods available.
- Package foods in smaller individual portion sizes.
- Develop packaging that allows for greater stability, preservation, and palatability of fresh fruits and vegetables without added sodium and reduces refrigeration needs in grocery stores.

Schools:

- Adopt competitive food policies that limit foods high in added sugar, saturated and trans fat, sodium, and calories while encouraging consumption of fruits, vegetables, whole-grain foods, and low-fat or fat-free dairy. (Competitive food policies should address vending, a la carte, school stores, fundraising, and all food sold outside of the reimbursable school lunch.)
- Ensure the availability daily of heart-healthy lunches to students and staff by meeting United States Department of Agriculture (USDA) nutrition standards, offering nonfried fish as a regular menu item, and offering at least 1 meal/day low in saturated and trans fat.
- Offer and require daily physical education taught by qualified teachers at all grade levels.

- Expand physical activity opportunities by providing noncompetitive as well as competitive extracurricular physical activity options. Examples include intermural and intramural sports, dance classes, and walking clubs.
- Incorporate healthy nutrition and increased physical activity policy into after-school activities.
- Adopt 100% smoke-free policies on school campus, including parking lots and surrounding school grounds.

Local Government:

- Develop and implement a Safe Routes to School plan.
- Implement land-use practices that promote nonmotorized transportation (walking and biking), such as complete streets and community parks.

Promote policies that increase availability of healthy foods (e.g., use of public land for farmers' markets and full-service grocery stores in low-income areas.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

American Heart Association Nutrition Committee, Lichtenstein AH, Appel LJ, Brands M, Carnethon M, Daniels S, Franch HA, Franklin B, Kris-Etherton P, Harris WS, Howard B, Karanja N, Lefevre M, Rudel L, Sacks F, Van Horn L, Winston M, Wylie-Rosett J. Diet and lifestyle recommendations revision 2006: a scientific statement from the American Heart Association Nutrition Committee. *Circulation* 2006 Jul 4;114(1):82-96. [97 references] [PubMed](#)

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2006 Jul 4

GUIDELINE DEVELOPER(S)

American Heart Association - Professional Association

SOURCE(S) OF FUNDING

American Heart Association

GUIDELINE COMMITTEE

American Heart Association Nutrition Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Committee Members: Alice H. Lichtenstein, DSc, FAHA (Chair); Lawrence J. Appel, MD, FAHA (Vice-Chair); Michael Brands, PhD, FAHA; Mercedes Carnethon, PhD; Stephen Daniels, MD, PhD, FAHA; Harold A. Franch, MD, FAHA; Barry Franklin, PhD, FAHA; Penny Kris-Etherton, RD, PhD, FAHA; William S. Harris, PhD, FAHA; Barbara Howard, PhD, FAHA; Njeri Karanja, PhD; Michael Lefevre, PhD, FAHA; Lawrence Rudel, MD, PhD, FAHA; Frank Sacks, MD, FAHA; Linda Van Horn, PhD, RD, FAHA; Mary Winston, EdD; Judith Wylie-Rosett, EdD, RD

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

The American Heart Association makes every effort to avoid any actual or potential conflicts of interest that may arise as a result of an outside relationship or a personal, professional, or business interest of a member of the writing panel. Specifically, all members of the writing group are required to complete and submit a Disclosure Questionnaire showing all such relationships that might be perceived as real or potential conflicts of interest.

Writing Group Disclosures

| Writing Group Member | Employment | Research Grant | Other Research Support | Speakers' Bureau/Honoraria | Ownership Interest | Consultant/Advisory Board |
|-----------------------|----------------------------------|-------------------------------------|------------------------|----------------------------|--------------------|--|
| Alice H. Lichtenstein | Tufts University | NIH | None | None | None | None |
| Lawrence J. Appel | Johns Hopkins University | None | None | None | None | None |
| Michael Brands | Medical College of Georgia | None | None | None | None | None |
| Mercedes Carnethon | Northwestern University | None | None | None | None | None |
| Stephen Daniels | University of Cincinnati | None | None | None | None | Abbott Laboratories Able Laboratories |
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| Writing Group Member | Employment | Research Grant | Other Research Support | Speakers' Bureau/Honoraria | Ownership Interest | Consultant/Advisory Board |
|----------------------|--|---|---|------------------------------|--------------------|---|
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| Barry Franklin | William Beaumont Hospital, Royal Oak, Mich | None | None | None | None | None |
| Penny Kris-Etherton | Penn State | Dairy Council; California Pistachio Board | None | Sunflower Association | None | McNeil |
| William S. Harris | St. Luke's Hospital | None | None | None | None | None |
| Barbara Howard | MedStar Research Institute | None | Donation of drugs: Pfizer, Merck, Schering-Plough | Lectures for Schering-Plough | None | Merck, Egg Nutri Council, General |
| Njeri Karanja | Kaiser Permanente | None | None | None | None | None |
| Michael Lefevre | Pennington Biomedical Research Center | General Mills, includes salary support (PI); Hershey Foods, includes salary support (Co-PI) | None | None | None | Kraft Foods; Merck Global Health and Wellness Advisory Board; International Life Sciences Institute Scientific Advisory Technical Commission on Fatty Acids |
| Lawrence Rudel | Wake Forest School of Medicine | None | Lipid Sciences contract research | Merck | None | TAP Pharmaceuticals |
| Frank M. Sacks | Harvard School of Public Health | None | None | None | None | None |
| Linda Van Horn | Northwestern University | None | None | None | None | None |
| Mary | American | None | None | None | None | None |

| Writing Group Member | Employment | Research Grant | Other Research Support | Speakers' Bureau/Honoraria | Ownership Interest | Consultant/Advisory Board |
|----------------------|--|-------------------|------------------------|----------------------------|--------------------|---------------------------|
| Winston | Heart Association | | | | | |
| Judith Wylie-Rosett | Albert Einstein College of Medicine at Yale University | Atkins Foundation | None | None | None | Frito-Lay (resigned) |

This table represents the relationships of writing group members that may be perceived as actual or reasonably perceived conflicts of interest as reported on the Disclosure Questionnaire, which all members of the writing group are required to complete and submit.

Reviewer Disclosures

| Reviewer | Employment | Research Grant | Other Research Support | Speakers Bureau/Honoraria | Ownership Interest | Consultant/Advisory Board |
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| Benjamin Caballero | Johns Hopkins University Center for Human Nutrition | None | None | None | None | None |
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| Scott M. Grundy | University of Texas Southwestern Medical Center at Dallas | Merck, Abbott, Kos | None | Merck, Pfizer, Sankyo, Schering Plough, Kos, Abbott, Fournier, Bristol-Myers Squibb, AstraZeneca | None | None |
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The following is available:

- Methodology manual for ACC/AHA guideline writing committees. Available from the [American Heart Association Web site](#).

PATIENT RESOURCES

None available

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